

*The Figures of some of Mr. Leewenhoecks Microscopical Observations, formerly publish'd (in Numb. 94. p. 6037.6038.) together with their Explication.*

**T**His Curious observer, having been desired by the Publisher, since his first Communications, already printed in these Papers, that, for further satisfaction, he would please to transmit the *Figures* of what he had so well observed, and he having not only very obligingly complied with that desire, but also added New Observations; we thought our selves bound to do him right in publishing both the *Figures* of his former Communications, and his Additions thereunto; though for this time we must content our selves only with the former of these, reserving the latter for another opportunity. And in the Explication of these *Figures* we shall here give you in English, what the observer sent us in Dutch:

See *T A B. I.*

**I**N *Fig. 1.* A B is the great Sting, or rather the Sheath or Case of the Bee, out of which were taken the two Stings (for, that the Bee hath two, this observer formerly acquainted us with;) E is the cavity of the sheath, in which the two stings, by and by to be described, lye; like a quill pulled out of a fowl's wing, and of that cut off a third part in length, and by its sides bent a little inwards towards E. D is the thickness of the Case beneath: And about DA the two Stings shew themselves, each in a place by it self; which I have seen my self, when I broke this thick part of the Sheath in pieces.

In *Fig. 2.* H I is part of the Sting taken out of the Sheath A B, which appears a little side-ways; whence it is, that the crooks or forks K K do not shew so big nor sharp, as indeed they are. L is the back of the sting without forks; which side or back is almost as broad as one of the sides of the sting, when the crooks appear.

In

In *Fig. 3.* *M N* is the whole Sting, taken also out of the Sheath *AB* in *Fig. 1.* and with its back, which is without forks (as hath been shewn in *Fig. 2.* by *L*,) turn'd to the Eye. Here the crooks shew themselves, (though turn'd from the Eye) through the Sting, as appears by *R*. The upper part of the Sting *NQ* is closed round about, and hollow within; and the lower part *QS* is open. *SM* is a part of the broken sinew, which is very near as long as the whole sting; and when it can be taken whole out of the body, it contracts it self into the shape of a half Moon, and appears of the colour of a Tortoise-shell, as also doth the Sting it self. *OP* is the body fastned to the Sting, and placed in the thicker part of the Case *DCA* (in the *first Figure*) to wit, *S* about *A*, and *T* towards *D*.

In *Fig. 4.* *abc* are both the Stings, as they lye together before, close against the sheath; yet is one of them a little higher than the other: And forasmuch as at *a* there is yet seen a little of the sheath, here both the stings seem to be one, furnish't on both sides with crooks.

In *Fig. 5.* *edgfb* are both the Stings, in part out of their Sheath; yet doth the sting *edh* stand a little higher out of the case than the sting *gfb*. Thus have I found them to lye in their sheath, when they are at rest.

In *Fig. 6.* Two stings, standing also a little out of the sheath. As to the motion of these Stings, I conceive it thus to be made: First, the Bee draws her sheath, together with its stings out of the body, and endeavors to thrust it as far as she can into the body she will sting, together with one of the stings, which at that time she draws out of the case: which sting when she is drawing back again, but it not being able, by reason of the crooks, to return, she pulls the sheath and the other sting deeper into the body. Now it is that she useth her other sting, which she then thrusts also into the body as deep as she can, and then endeavors to pull that back also; by which pulling back she thrusts her sheath and first sting yet deeper into the body: And this she continues so long till she gets both the stings and the sheath, as far as to the thick part of the sheath, into the body; which done, the stings need no more motion out of the sheath, when the

Rrrrrr

body

body of the sting (in *Fig. 3.*) O T P in the thickness of the sheath C D A (in *Fig. 1.*) can move from C to D.

And so much for the *Stings* of the Bee. Let us now see how our Observer explains his *Figures*, representing the several *artus* or limbs, he hath taken notice of about the Head of a Bee; which were also briefly mentioned in the aforesaid *Numb. 94.*

See then the same TABLE I. *Fig. 7.* where L D A B C is one of the two small limbs, which the Bee hath on the fore-part of her Head, and which he calls *Arms*, wherewith he judges she makes her Hony-combs, each furnish't with three peculiar joints, as at D, A, B.

In *Fig. 8.* E F is one of the two small limbs, which the Bee hath likewise on the fore-part of her Head, by him called *Scrapers*, by the help of which, he conceives, she scrapes the wax from flowers.

In *Fig. 9.* G H is the small limb, which is also placed before on her head, and is by him call'd the *Wiper*, wherewith he conjectures she wipes off the Hony from the flowers.

*Fig. 10.* K N represents the *Scraper* of a wild Bee, which he exhibits here with the rest, because it is of a different make from the Scraper of a tame Bee, above in *Fig. 8.*

The remainder of this Authors Observations, which are chiefly about the Structure of Plants, and the contrivance of Nature to make them shoot and grow upwards, we must refer to another Month; being obliged to employ the rest of this *Tract* in publishing some Letters that have been exchanged between two Eminent Mathematicians about a considerable Optic Problem of *Alhazen*; as also in giving an account, according to our custom, of some new Philosophical Books, lately come out of the Press.

